

1952

Potential utility of the Minnesota personality scale in counseling home economics students at Iowa State College

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POTENTIAL UTILITY OF THE MINNESOTA PERSONALITY SCALE ✓
IN COUNSELING HOME ECONOMICS STUDENTS
AT IOWA STATE COLLEGE

by

Alice L. Palubinskas

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of
The Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Major Subject: Vocational Education

Approved:

Signature was redacted for privacy.

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1952

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I. INTRODUCTION

Personality scales are sometimes included in batteries of tests designated as indicators of aptitude in certain fields of endeavor. Such batteries have been used in industry, in the armed forces, and in academic institutions. The present investigation is an attempt to discover what purposes the inclusion of a personality measure in such a battery of tests may serve.

There are at the present time many measures of personality traits. It is generally agreed by psychologists and educators that the better tests in this field are those administered on an individual basis. However, such tests lack practicality in the typical task which confronts a person responsible for the administration of a program of testing to a large number of individuals. It is, therefore, much more common to find personality traits measured, in such instances, by some type of group test. Although modifications of some of the individual tests of personality and the projective tests are available for administration to groups, it is more typical to find tests of the self-inventory questionnaire type used.

The present investigation is a study of a self-inventory questionnaire, the Minnesota Personality Scale. The study attempts to relate the scores on this scale to two main areas of college life. The first

area is that of academic achievement and survival; the second is a group of variables, non-academic in nature, which shall hereafter be referred to as social-educational factors.

The information obtained in this investigation may be of use to college counsellors who have the task of interpreting entering test batteries. Furthermore, it may also be useful to school administrators who, in dealing with groups of students, are often called upon to make decisions based upon classifications of students obtained through such test batteries.

II. REVIEW OF LITERATURE

The literature of personality measurement is extensive. For the present investigation a review of only three topics will be presented: personality tests and academic achievement, personality tests and factors other than academic achievement, and research employing the Minnesota Personality Scale.

A. Personality Tests and Academic Achievement

In the literature of psychology and education there are a large number of studies relating measured personality traits to academic achievement. Stagner¹, Harris², and Wolf³ have summarized the literature, and all have concluded that objective measures of personality show no important relationships to academic achievement. However, they have reported that several studies have indicated some of the following generalizations: over-socialized students often receive lower grades; liberalism has been found to be associated with high grades; underachievers often possess emotional problems.

¹Stagner, Ross. The Relation of Personality to Academic Aptitude and Achievement. *Journal of Educational Research*. 26:648-655. 1933.

²Harris, Daniel. Factors Affecting College Grades-A Review of the Literature 1930-1937. *Psychological Bulletin*. 37:125-166. 1940.

³Wolf, S. Jean. Historic Background of the Study of Personality As It Relates to Success or Failure in Academic Achievement. *The Journal of General Psychology*. 19:417-436. 1938.

Many of the studies relating personality factors to college achievement have employed simple correlations between the measures of personality and college grade-point average. In such studies the relationships of personality and grade-point average to factors such as intelligence and college aptitude are ignored.

A better technique has been the use of multiple regression, i.e., the prediction of college grade-point average from intelligence or college aptitude test scores plus the particular personality test score. A test of significance may then be made for the advantage of the addition of the personality test information to the prediction. A technique somewhat similar, but not as widely used, is the discriminant function to separate the group into those individuals who remain in college and those who withdraw.

The present investigation utilized all three of these techniques, correlation, multiple regression, and discriminant function. The discrimination of the group who remained in college from the group who withdrew was made somewhat more meaningful by the separation of the group who withdrew into two classifications: that of satisfactory achievement and that of unsatisfactory achievement.

B. Personality Traits and Factors Other Than Academic Achievement

There have been a number of studies of college populations in which personality traits have been correlated with factors other than

academic achievement. Those studies which appear to relate most closely to the factors considered in the present investigation are reviewed.

Using the Bell Adjustment Inventory, Pederson¹ studied 380 University of Rochester freshman women. She related the scores on the Bell Adjustment Inventory to information available for the subjects from the University's Bureau of Educational Statistics. She found:

1. some validation of the home adjustment scale with material obtained from the subject's autobiographies;
2. the health scale appeared to be validated to some extent from these autobiographic records;
3. those individuals maladjusted in health showed high emotionality;
4. the social scale was substantiated by material obtained from the College Social Advisor's records.

Marsh² found some validity for the home adjustment scale of the Bell Adjustment Inventory. Of 1000 freshman and sophomore women at Stephens College he contrasted twenty-three women who had been diagnosed by the Guidance Committee, consisting of the Dean of Administration, the college physician, and two psychologists, as maladjusted socially and emotionally with the first fifty other cases from an

¹Pederson, Ruth A. Validity of the Bell Adjustment Inventory When Applied to College Women. The Journal of Psychology. 9:227-236. 1940.

²Marsh, Charles J. The Diagnostic Value of the Bell Adjustment Inventory for College Women. Journal of Social Psychology. 17:103-109. 1943.

alphabetical list of students. Of the scales on the Bell Adjustment Inventory the home adjustment scale showed the greatest percentage difference. The number of subjects in the study, however, was small and the selection of the two groups appears open to some question.

Lepley¹, contrasting 100 fraternity and 140 non-fraternity college women on a number of personality inventories, found the fraternity women more sociable, more emotional, and more docile in their attitudes. The non-fraternity women he found to be more suggestible, more susceptible to common annoyances, more prone to rationalize and offer alibies, more anxious or fearful, and more personally intolerant.

Darley and Anderson² summarized a group of seven studies dealing with the effect of college class-work in social sciences on attitudes. They reported that each of the authors found gains in liberalism and tolerance regardless of the measuring instrument used, the educational level studied, or slight modification in teaching methods.

In a rural sample in two western states (Nebraska and Colorado) Guilford and Martin³ found that at all ages from 15 to 50 and for

¹Lepley, William M. A Comparison of Fraternity and Non-fraternity Population with Regard to Certain Personality Characteristics. *Journal of Applied Psychology*. 26:50-54. 1942.

²Darley, John G. and Anderson, Gordon V. Application of Personality and Character Measurement. *Review of Educational Research*. 14:67-77. 1944.

³Guilford, J. P. and Martin, Howard. Age Differences and Sex Differences in Some Introvertive and Emotional Traits. *Journal of General Psychology*. 31:219-229. 1944.

different levels of intelligence, the females average more socially introverted, more depressed and cycloid than the males.

In another study of the personality characteristics of rural and urban women, Robertson and Stromberg¹ compared the scores of 136 college women on the Roger Inventory. They failed to find statistically significant results, but they noted that

the size of the community, perhaps the school, contributes more to make a dominant, extroverted, non-neurotic person, as measured by the Roger Personality Inventory, than the student's residence, whether on a farm or in town².

In a study of personality changes in college students reported by Robertson and Stromberg³ it was found that, over a period of two and one-half years of college experience, subjects showed changes in the direction of more dominant, extroverted, and non-neurotic personality traits.

The literature in the area of personality tests and factors other than academic achievement points up the need for validation studies based upon objective classification of individuals rather than the use

¹Robertson, Annie E. and Stromberg, Eleroy L. A Comparison of the Personality Test Scores of Rural and Urban College Women. *Journal of Social Psychology*. 11:411-414. 1940.

²Ibid., p. 413.

³Robertson, Annie E. and Stromberg, Eleroy L. The Stability of Personality Ratings During College Residence. *School and Society*. 50:639-640. 1939.

of rating sheets or the validation against other personality tests. The present investigation has made use of objective classifications insofar as possible.

Another problem is that of the interrelationships of variables. Many studies have failed to stratify where such a technique is crucial to the results. In the present study covariance was applied whenever stratification occurred.

C. Research Employing the Minnesota Personality Scale

Relatively little experimental work has been done with the Minnesota Personality Scale. However, the few studies which have been reported and some of the studies of the tests from which the personality scale was derived will be reviewed.

Darley¹ studied the test results obtained with 326 men and 217 women in the General College of the University of Minnesota. The tests were: The Minnesota Scale for the Survey of Opinions, The Bell Adjustment Inventory, and the Minnesota Inventory of Social Attitudes, and the Minnesota Inventory of Social Preferences. The authors of these

¹Darley, John G. Scholastic Achievement and Measured Maladjustment. *Journal of Applied Psychology*. 21:485-493. 1937.

scales, Rundquist and Sletto¹, Bell², and Williamson and Darley³ all cite evidence showing that their respective tests are not related to academic achievement.

Darley found the correlations between grade-point averages and the thirteen sub-scales of these tests to be low. He hypothesized that, if measured maladjustment affected academic achievement adversely, individuals showing statistically deviant scores would be a group for whom it would be more difficult to predict grade-point averages. To test this hypothesis he correlated ACE scores with grade-point averages and then observed the magnitudes of the correlations for different groups. These correlations were:

1. Men with no statistically significant deviant scores	0.653
2. All men	0.536
3. Men with four or more statistically significant deviant scores	0.640
4. Women with no statistically significant deviant scores	0.576
5. All women	0.435
6. Women with four or more statistically significant deviant scores	0.398

¹Rundquist, E. A. and Sletto, R. F. Scoring Instructions for the Minnesota Scale for the Survey of Opinion. University of Minnesota Press. 1936.

²Bell, H. M. Manual for the Adjustment Inventory. Stanford University Press. 1934.

³Williamson, E. G. and Darley J. G. Manual for the Minnesota Inventory of Social Attitudes. The Psychological Corporation, New York City. 1937.

With women Darley's hypothesis appeared tenable. The maladjusted group showed the lowest relation between ability and achievement. However, his hypothesis was not upheld for men. Darley notes that the men studied availed themselves in substantially greater numbers of the counselling services of Minnesota's Personnel Clinic. Whether this finding accounts for the difference in the relationship between ability and achievement is not known.

In the same paper Darley noted a tendency for economically radical viewpoints to be correlated with higher grades. He also found that with women lower grades were related to extreme sociability. He also listed four reasons why statistically significant measured maladjustment is not always a tenable concept. He pointed out that students do not always know the problem disturbing them; students do not always answer candidly; the real problem may make a small contribution to the score; and personality scales do not measure all phases of problems.

In a later study Darley¹ was concerned about the interpretation of changes in measured attitudes and adjustments. Using the Minnesota Scale for the Survey of Opinion, the Bell Adjustment Inventory, the Minnesota Inventory of Social Preferences, and the Minnesota Inventory of Social Behavior he retested 326 men and 217 women college students.

¹Darley, John G. Changes in Measured Attitudes and Adjustments. The Journal of Social Psychology. 9:189-199. 1938.

All but a few of these students were retested after an average interval of 9.2 months. Retest coefficients, as one would expect, were found to be lower than odd-even reliability coefficients reported in the respective test manuals. The retest coefficients ranged from 0.515 for men on "inferiority" to 0.824 for women on "home adjustment".

Darley noted that both men and women showed conservative tendencies at the first testing. At the time of retesting both men and women had moved even farther toward greater conservatism. On the Adjustment Inventory the group as a whole moved in the direction of better adjustment. The group showed gains in Social Attitudes; the women gained most. Women in general showed more changes than did men.

Berdie¹ at the University of Minnesota compared the Minnesota Personality sub-scale scores of a group of students who had completed a check list of personal problems before seeing a college counsellor. Those students who had checked social problems scored significantly lower on the Social Adjustment sub-scale. Students who claimed that they did not get along well with their parents scored significantly lower on the Family Relations section than did those who did not check this item. However, the author pointed out that since many of the problems on the check list were very much like some of the items on the test, the observed relationship was not surprising.

¹Berdie, Ralph F. An Aid to Student Counselors. Educational and Psychological Measurement. 2:281-290. 1942.

At Iowa State College Winberg¹ studied the responses of under-achievers on three measures of personality. One of the tests employed was the Minnesota Personality Scale. Underachievers were selected on the basis of a comparison of ACE scores and grade-point average. The technique employed involved an item analysis of the personality tests with tetrachoric correlations for each item for underachiever-control grouping and symptomatic-asymptomatic response grouping. Care was taken not to include items typical of overachievers as a group.

Of the personality tests studied, the greatest number of differential items were found on the Minnesota Personality Scale. The under-achievers gave predominantly "well-adjusted" responses to the Social Adjustment scale and to the Economic Conservatism scale. Morale and Emotionality gave fewer differential items, but the underachievers scored in the positive direction on both of these scales. On the Family Relations scale, however, this was not true. The underachievers gave more maladjusted responses in this area.

Winberg hypothesized that the underachievers were perhaps too well adjusted socially. Certainly this negative relationship between social adjustment and academic achievement is supported in the literature.

¹Winberg, Wilma C. Personality and Collegiate Underachievement. Unpublished M. S. Thesis. Ames, Iowa, Iowa State College Library. 1947.

The Minnesota Personality Scale was used by MacRae¹ in a study of 260 freshman men enrolled in Engineering at the Camp Dodge Annex of the Iowa State College. He studied each of the test sub-scales in multiple correlations with high school average, ACE scores, and scores on the Owens-Bennett Test of Mechanical Aptitude. He found that each of the five personality scales added little to the prediction of first-quarter grade-point average.

MacRae used the discriminant function technique to separate the group who continued in college from the group that withdrew at the end of the first quarter. The personality scale scores did not add significantly to the discrimination made by high school average, ACE scores, and Owens-Bennett scores.

It might be noted that MacRae found Emotionality significantly nonlinear in its relationship to achievement. He obtained a t-value of 2.13, significant at the 5% level, for the advantage of using a quadratic equation instead of a linear equation.

These studies suggest the extent of research which has been carried on employing the Minnesota Personality Scale. The present

¹MacRae, John M. Usefulness of the Minnesota Personality Scale for Predicting Achievement of Freshman Engineering Students. Unpublished M. S. Thesis. Ames, Iowa, Iowa State College Library. 1949.

investigation attempts to extend the validation of this scale to a number of other factors in college life. In the area of academic achievement the students withdrawing from college are considered in two groups, satisfactory academic achievement and unsatisfactory academic achievement. In addition, senior year as well as freshman grade-point average was considered.

The Minnesota Personality Scale was also studied with respect to some college variables other than academic achievement. These variables were size of home town, kind of college housing, type of curriculum, marriage plans, attitude toward experience at Iowa State College, visits to the college hospital, and state residence.

The Personality Scale was also readministered after a three and one-half year interval, and these scores as well as the difference between the two testings were studied in relation to the variables listed above.

III. THE MINNESOTA PERSONALITY SCALE

The Minnesota Personality Scale was developed by Darley and McNamara¹ through work in personality measurement in the clinical personnel program at the University of Minnesota. The test was a result of factor analyses applied to the following tests: the Minnesota Scale for the Survey of Opinions, the Bell Adjustment Inventory, and two Minnesota Inventories for Social Attitudes. These four scales yielded thirteen separate scores: morale, feelings of inferiority, family attitude, attitudes toward the legal system, economic conservatism, attitudes toward education, general adjustment, home adjustment, health adjustment, social adjustment, emotional adjustment, social preferences, and social behavior.

Factor analyses were applied to these thirteen sub-scores and five factors were obtained. The groupings of the thirteen sub-scores into five factors were as follows:

1. morale, attitude toward law, education, general adjustment;
2. inferiority, social adjustment, social behavior, social preferences;
3. family adjustment, home adjustments;

¹Darley, J. G. and McNamara, W. J. Factor Analysis in the Establishment of New Personality Tests. *Journal of Educational Psychology*. 31:321-334. 1940.

4. health adjustments, emotional adjustment;
5. economic conservatism.

The Minnesota Personality Scale consists of the items found to contribute most to the five measures of individual adjustment. Darley and McNamara¹ name and describe these five parts:

1. Morale: High scores are indicative of belief in society's institutions and future possibilities. Low scores usually indicate cynicism or lack of hope in the future.
2. Social Adjustment: High scores tend to be characteristic of the gregarious, socially mature individual in relations with other people. Low scores are characteristic of the socially inept or undersocialized individual.
3. Family Relations: High scores usually signify friendly and healthy parent-child relations.
4. Emotionality: High scores are representative of emotionally stable and self-possessed individuals. Low scores may result from anxiety states or over-reactive tendencies.
5. Economic Conservatism: High scores indicate conservative economic attitudes. Low scores reveal a tendency toward liberal or radical points of view on current economic and industrial problems.

Darley and McNamara pointed out in their discussion that excessively high scores, when considered with other clinical information, may be indicative of some maladjustment.

¹Darley, John G. and McNamara, Walter J. Manual of Directions: Minnesota Personality Scale. Psychological Corporation, New York, New York. (n.d.) p. 1.

Thus a very high score on Part I may represent naive and uncritical acceptance of society as the best of all possible worlds. A very high score on Part II may represent excessive oversocialization or extreme "extroversion". A very high score on Part III may represent some unrecognized overdependence on the family at an age when some independence might be expected. A very high score on Part IV may represent manic or hyperactive tendencies. A very high score on Part V may represent reactionary viewpoints which exclude the absorption of new material in some of the social sciences.¹

There are separate forms for men and women, and the scale is self-administering on either a group or an individual basis. It requires approximately forty-five minutes to complete the scale. The items are five choice category responses to simple statements.

Because of the manner in which the scale was developed, that is the grouping of tests to form increasingly homogeneous groups, the reliability coefficients are higher than those found on the original scales. Validity has not been extensively studied with this personality scale.

The scale may be scored by hand or machine, and norms are provided for both men and women for either type of scoring. These norms are based on an analysis of the scores of 1083 men and 888 women freshmen at the University of Minnesota.

¹Darley, J. G. and McNamara, W. J. Manual of Directions. p. 1.

IV. METHOD OF PROCEDURE

The present study consists of four principal parts. The first is an investigation of the relationship between first-quarter achievement at the Iowa State College and scores on the personality scale; the second is a study of the relationship of these personality scale scores and the tendency to remain in college or to withdraw from college; the third is an investigation of the relationship of these personality scale scores to the achievement of a group to whom the personality scale was readministered after four years of college; the fourth is a study of the relationship of the original and retested personality scores of this retested group to certain social and educational factors.

Figure 1 is included to illustrate the principal parts of the present investigation. The divisions of the various groups of subjects are enclosed in heavy outlines. The number of subjects in each division is included. The data gathered for the subjects are outlined in a finer line. The statistical techniques employed in the various steps of the analysis are outlined by the broken lines. This figure traces the four principal steps of the investigation; relation of personality scale scores to the following: first quarter achievement, survival and attrition, achievement of retested group, social-educational information.

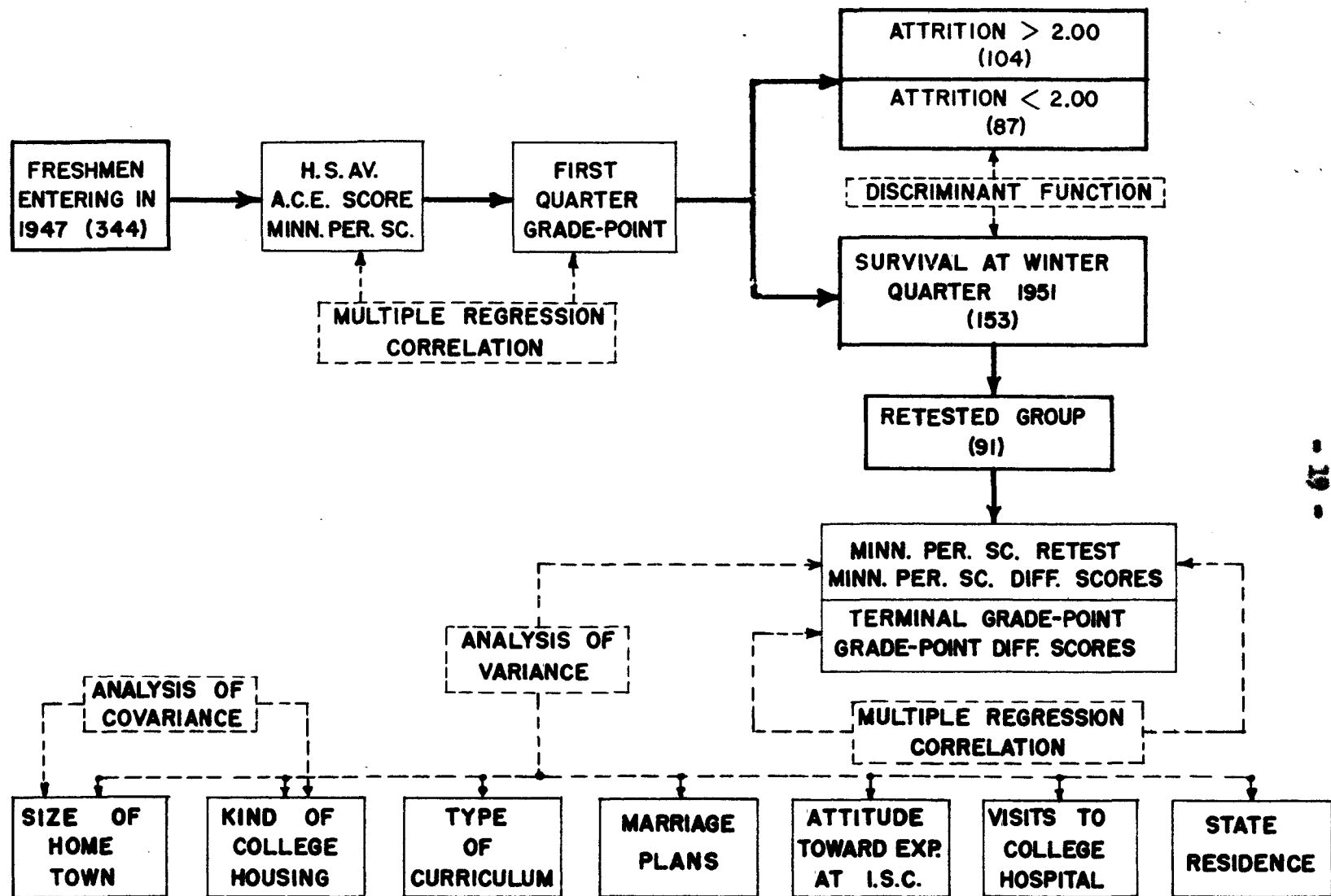


FIG. I. DIAGRAM OF INVESTIGATION

In 1947, the freshman entering class was given, along with the customary entrance examinations, the Minnesota Personality Scale. These scores were made available by the Student Testing Bureau of the Iowa State College. In the Winter Quarter of 1951 the same personality scale was readministered to a group of these entering freshmen who were still available for testing on the campus.

The subjects in the present investigation are 344 entering freshmen classified at that time as home economics students. The subjects were those for whom complete information for the present investigation was available. Practically all subjects were between the ages of 17 and 18, were unmarried, and non-transfer students. All subjects were women. The retested group included ninety-one of the original group who submitted themselves for retesting. All of these latter subjects were unmarried and in residence at the Iowa State College during the Winter Quarter of 1951.

In addition to the personality scores available and the retest scores obtained for the 91 subjects, the high school average and American Council on Education Psychological Examination score (hereafter referred to as ACE score) were obtained from the official records of the college registrar. At the time of retesting the 91 subjects completed a short personal information check list. In addition the medical

records of the 91 retest subjects were made available by the Director of the College Hospital at the Iowa State College.

There were 121 subjects for whom all of the necessary information was complete, who were in residence at the Iowa State College, and unmarried as of Winter Quarter 1951. These individuals were contacted by use of a form letter, and those who did not answer the original letter were contacted by one follow-up letter, two postcards, and whenever possible, telephone calls. Copies of these communications may be found in the Appendix.

There were 91 subjects who completed usable retest forms. The retest forms of eight subjects were incomplete. It was felt that any further pressure brought to bear upon those 22 students who either failed to respond or refused to submit to the retesting would only serve to invalidate any results that might have been obtained.

The 91 subjects were retested individually or in small informal groups at the College Testing Bureau over a period of three weeks during the Winter Quarter of 1951. Both the original and retest personality scores were machine scored and compared to the appropriate norms. A copy of the Minnesota Personality Scale for women and the Personal Information Sheet may be found in the Appendix.

The principal statistical techniques employed in this investigation were: correlation, multiple regression, discriminant function, analysis of variance, and analysis of covariance.

V. GENERAL COMPARISON OF SCORES WITH PUBLISHED NORMS AND RETEST SCORES

The purpose of the following analyses was to show the comparability of the scores obtained for the subjects in the present investigation with available norms. It was desired also to show the relationships between the various groups of personality scale scores used in the present study.

Table 1

Iowa State College Group and Minnesota Percentiles

Sub-scale	Q ₁	Median	Q ₃
Morale	45	70	85
Social Adjustment	25	50	75
Family Relations	40	65	80
Emotionality	30	50	80
Economic Conservatism	25	45	70

A comparison was made of the first and third quartiles and the median of the 344 Iowa State College subjects with the published percentile scores for the Minnesota norm group. The norms presented by Darley and McNamara¹ are based on the test scores of 888 freshman women

¹Darley J. G. and McNamara, W. J. Manual of Directions.

at the University of Minnesota. The results, recorded to the nearest fifth percentile, are summarized in Table 1.

The two groups were quite similar. The Iowa group was somewhat higher on Morale and Family Relations; however, all of the other sub-scales were within five percentiles of the Minnesota group.

Table 2
Split-Half Reliability Coefficients

Sub-scale	Minnesota Group Scores (N = 100) (Corrected)	Iowa Group Scores (N = 91)	
		Uncorrected	Corrected
Morale	0.91	0.73	0.84
Social Adjustment	0.95	0.94	0.97
Family Relations	0.95	0.90	0.95
Emotionality	0.93	0.88	0.96
Economic Conservatism	0.92	0.78	0.87

In order to compare the present investigation's estimate of reliability with the reliability coefficients presented in the manual, split-half reliability coefficients were computed for the second testing of the 91 retested subjects. This information is presented in Table 2 for

comparison with the reliability coefficients reported by Darley and McNamara¹. Reliability coefficients were corrected by the Spearman-Brown formula. They are substantially equal.

Table 3 shows inter-sub-scale correlations for the 91 retested subjects on their freshman personality test scores, with the correlations reported by Darley and McNamara² shown in parentheses. These intercorrelations are compared with those given by Darley for 557 entering freshman women in the College of Science, Literature, and The Arts in the University of Minnesota. It is evident that the inter-sub-scale correlations for the two groups differ little.

It should perhaps be noted that, although the five sub-scales represent factorially analyzed components, it cannot be stated that the sub-scales measure independent components of personality.

Darley and McNamara³ point out that it should not be surprising to find substantial relationships between such factors as Social Adjustment and Emotionality, or between Emotionality and Family Relations. These factors are widely recognized to be interrelated.

Test-retest correlations were computed for the two administrations of the personality scales to the 91 subjects. The actual retest

¹Darley, J. G. and McNamara, W. J. Manual of Directions.

²Ibid.

³Ibid.

Table 3

Inter-Sub-scale Correlations

Sub-scale	Sub-scale			
	Morale	Social Adjustment	Family Relations	Economic Conservatism
Morale	0.365 (0.360)	0.324 (0.340)	0.390 (0.380)	0.161 (0.180)
Social Adjustment		0.244 (0.260)	0.355 (0.480)	0.289 (0.130)
Family Relations			0.454 (0.550)	0.004 (0.160)
Emotionality				0.183 (0.150)
Economic Conservatism				

interval was a period of approximately three and one-half years.

Table 4 summarizes these correlations.

As might be expected, the correlations are not as great as the split-half reliability coefficients shown in Table 2. Since the

Table 4

Test-Retest Correlations

Sub-scale	Coefficient of Correlation
Morale	0.352
Social Adjustment	0.604
Family Relations	0.557
Emotionality	0.560
Economic Conservatism	0.533

retest interval represented three and one-half years in the life of a not fully-matured individual, even such lowered correlations appear to indicate that fairly stable personality factors were measured.

The 91 subjects for whom scores on a second administration of the personality scale were obtained are referred to in this investigation as the retested group. Table 5 summarizes the mean scores of this

retested group for their freshman testing and for the testing which occurred three and one-half years later.

Table 5 shows highly significant increases in Social Adjustment, Emotionality, and Economic Conservatism. According to a strict interpretation of the manual, this increase would indicate generally better

Table 5

Minnesota Personality Scale Scores and Retest Scores

Sub-scale	Mean Freshman Scores	Mean Retest Scores	t-test
Morale	181	183	1.55
Social Adjustment	229	242	5.89**
Family Relations	153	152	0.64
Emotionality	171	177	3.07**
Economic Conservatism	103	114	11.49**

adjustment on the personality traits measured. However, whether or not such an interpretation is justified cannot be ascertained from research which has so far been made available on the Minnesota Personality Scale. The only published norms are for college freshmen. The question remains open as to whether three and one-half years of college experience increased personality scores, or whether subjects three and one-half years older would require new norms.

The retested group's personality scores were compared with the scores of the original group of 344 subjects. Table 6 summarizes the means of the two groups.

Table 6

Mean Scores of Original and Retested Groups

Sub-scale	<u>Mean Sub-Test Scores</u>	
	Original Group	Retested Group
Morale	181	181
Social Adjustment	228	228
Family Relations	154	154
Emotionality	170	168
Economic Conservatism	103	103

The means were practically identical. Thus, it is probably justified to conclude that the personality scale scores of the retested group are not significantly different from those of the original larger group.

VI. MINNESOTA PERSONALITY SCALE AND ACADEMIC ACHIEVEMENT

Many of the problems which students discuss with college counselors are related to academic achievement. Although the literature reports few significant relationships between college achievement and measured personality traits, the present investigation would be incomplete without a study of the Minnesota Personality Scale as its sub-scores relate to some of the aspects of academic achievement. The two principal criteria of achievement employed in this investigation were: survival-attrition and the college grade-point average.

A. Survival and Attrition

A topic of concern in many counseling situations in college is the problem of those individuals who withdraw from college before graduation. The relationships of the Minnesota Personality Scale to this tendency to withdraw from college were studied.

Since the reasons for withdrawal from college are varied, the group who left college were studied not only as a whole but also as two groups: those who maintained satisfactory grade-point averages and those who left college with unsatisfactory grade-point averages. This discrimination is shown in Figure 1.

Cumulative grade-point average at the time of the student's withdrawal from college was computed. A grade-point average of 2.00 or over is referred to in this study as satisfactory achievement. A grade-point average of 2.00 is equivalent to a grade of "C".

The personality scale scores of a college population from which one group withdraws while another group remains may be considered as a single distribution in which it is desired to obtain maximum discrimination between these groups. This dichotomy in the present investigation is referred to as survival-attrition. The survival group in the present study is understood to be those subjects who were enrolled at the Iowa State College during the winter of 1951, or those subjects who had prior to that time graduated from that institution. The attrition group includes all others of the original 344 subjects.

The statistical technique employed in the present study to obtain the maximum separation between these two groups was the discriminant function. The discriminant function was described by R. A. Fisher¹. An interesting history to 1949 of the development of this technique is to be found in an unpublished work by Zubay². Recent applications to

¹Fisher, R. A. The Use of Multiple Measurements in Taxonomic Problems. *Annals of Eugenics*. 7:179-188. 1936.

²Zubay, Eli A. Prediction of Probationary Freshmen and Effectiveness of a Supplementary Counseling Program at Drake University. Unpublished Ph.D. Thesis. Ames, Iowa, Iowa State College Library. 1950.

discriminant analyses in psychology and education was the subject of a symposium at Harvard. The published reports¹ together with the references which had been included bring the status of this type of analysis up to 1950. The technique of the discriminant function as it is used in this investigation to dichotomize a single distribution is described by Wert, Neidt, and Ahmann².

To test the contribution made by each of the Minnesota Personality Scale scores to the discrimination of the various groups a discriminant function was first computed using two independent variables related to college achievement as controls. The variables used in this investigation were high school average and ACE score. A series of discriminant functions were then formed using three independent variables: high school average, ACE score, and each of the Minnesota Personality Scale scores in turn. Tests were applied to determine whether there was a significant loss in discrimination in dropping from three to two variables by removing the personality scale score.

The survival and attrition problem was studied in this way using four groupings of the survival and attrition subjects. These various

¹Tiedeman, D. V., Rulon, P. J., Bryan, J. G. The Multiple Discriminant Function - A Symposium. The Harvard Educational Review. 21:71-95. 1951.

²Wert, James E., Neidt, Charles O., and Ahmann, J. Stanley. Biserial Correlation. Mimeographed manuscript of a chapter in a forthcoming book.

groupings were used in order to emphasize slightly different aspects of the problem. The four classifications were:

1. survival vs. total attrition;
2. attrition-satisfactory-achievement vs. attrition-unsatisfactory achievement;
3. attrition-satisfactory-achievement vs. survival;
4. survival plus attrition-satisfactory-achievement vs. attrition-unsatisfactory-achievement.

Each of these four classifications will be discussed separately.

1. Survival vs. total attrition

The first two groups to which the discriminant function analysis was applied were the survival and total attrition groups. There were 153 subjects classified as survival and 191 in the total-attrition group.

When the discriminant function equations were solved for each of the personality sub-scale scores (X_1 = personality sub-scale score; X_2 = high school average; X_3 = AGE) the discriminant functions in each case became:

Morale,

$$v = 0.00803545x_1 + 0.260514x_2 + 0.00460513x_3;$$

Social Adjustment,

$$v = 0.000622080x_1 + 0.270006x_2 + 0.00486635x_3;$$

Family Relations,

$$v = -0.000921681x_1 + 0.276334x_2 + 0.00480867x_3;$$

Emotionality,

$$v = 0.00351227x_1 + 0.259617x_2 + 0.00494560x_3;$$

Economic Conservation,

$$v = 0.00485235x_1 + 0.287323x_2 + 0.00483583x_3.$$

Table 7 summarizes the results obtained.

Table 7

Discriminant Functions: Survival vs. Total Attrition

Independent Variable	Multiple Biserial R	Loss F	r-Partial
Morale	0.3610	5.59*	0.1271
Social Adjustment	0.3272	0.14	0.0200
Family Relations	0.3271	0.13	-0.0194
Emotionality	0.3453	2.97	0.0931
Economic Conservation	0.3354	1.41	0.0642

The loss of the Morale variable is significant at the 5% level. Those individuals who withdrew from college scored, on the average, lower on Morale.

2. Attrition-satisfactory-achievement vs. attrition-unsatisfactory-achievement

To study the relationships of the personality sub-scale scores to the discrimination between those who left college with satisfactory achievement and those who left college with unsatisfactory achievement, the attrition group was studied in these two divisions.

The group with satisfactory achievement were considered to be one distribution, and the group with unsatisfactory achievement were considered as another distinct distribution. The formulas used for the discriminant function in this case were the original formulas proposed by Fisher¹. The independent variables were again high school average, ACE score, and each of the Minnesota Personality Scale sub-scores.

Upon solution of the normal equations the discriminant functions became:

Morale,

$$v = -0.0000271993x_1 + 0.00823486x_2 + 0.000158325x_3;$$

Social Adjustment,

$$v = -0.0000201639x_1 + 0.00822990x_2 + 0.000158148x_3;$$

Family Relations,

$$v = -0.0000248061x_1 + 0.00836916x_2 + 0.00635619x_3;$$

¹Fisher, R. A. Op. cit.

Emotionality,

$$v = -0.0000188314x_1 + 0.00826516x_2 + 0.000158626x_3;$$

Economic Conservatism,

$$v = 0.000114735x_1 + 0.00930296x_2 + 0.000154694x_3.$$

The loss for each of the sub-scales were as follows:

Morale	0.16
Social Adjustment	0.30
Family Relations	0.22
Emotionality	0.23
Economic Conservatism	0.98

These losses were determined by use of the F-test and none was found to be significant.

3. Attrition-satisfactory achievement and survival vs. attrition-unsatisfactory-achievement

It was desired to study the distinction of survival and attrition more definitely on the basis of academic achievement. Those individuals who withdrew from college with satisfactory achievement and those individuals who remained in college were therefore combined in an analysis which opposed them to the group who withdrew from college with unsatisfactory achievement.

Reference to Figure 1 will show that the first group, those who survived and those who left college with satisfactory achievement,

totalled 257; the other group, those who left college with unsatisfactory achievement, totalled 87. The analysis was that described by Wert, Neidt, and Ahmann¹ for a single distribution. The same variables, high school average, ACE score, and personality scale sub-scores, were used.

The solution of the normal equations yielded the following discriminant functions:

Morale,

$$v = 0.00205170x_1 + 0.437627x_2 + 0.00749915x_3;$$

Social Adjustment,

$$v = -0.000570897x_1 + 0.440992x_2 + 0.00758177x_3;$$

Family Relations,

$$v = -0.00138246x_1 + 0.448543x_2 + 0.00746244x_3;$$

Emotionality,

$$v = 0.000737133x_1 + 0.437906x_2 + 0.00758318x_3;$$

Economic Conservatism,

$$v = -0.000270128x_1 + 0.439336x_2 + 0.00757177x_3.$$

The results of the analyses are presented in Table 8. In no case did the dropping of the personality sub-scale score cause a significant loss in the discriminant function.

¹Wert, James E., Neidt, Charles O., Ahmann, J. Stanley. Op. cit.

Table 8

Discriminant Function: Attrition-Satisfactory-Achievement
Plus Survival vs. Attrition-Unsatisfactory Achievement

Independent Variable	Multiple Biserial R	Loss F	r-Partial
Morale	0.6093	0.49	0.0379
Social Adjustment	0.6087	0.16	-0.0214
Family Relations	0.6093	0.006	-0.0228
Emotionality	0.6087	0.18	0.0228
Economic Conservatism	0.6075	0.06	-0.0014

4. Survival vs. attrition-satisfactory-achievement

In an attempt to study survival and attrition for reasons other than low grade-point average, the survival and attrition-satisfactory-achievement groups were contrasted. It cannot, from the data available in this investigation, be concluded that all of the students in the attrition-satisfactory-achievement group left college for reasons other than low grade-point average. It was of course possible that subjects with achievement considered officially satisfactory by the college would have withdrawn from college because of what they personally considered to be unsatisfactory achievement. However, by selecting the group who had grade-point averages greater than 2.00 this factor was lessened insofar as the data allowed.

Discriminant functions were formed using high school average, AOE score, and each of the personality sub-scale scores. When the normal equations were solved the discriminant functions were:

Morale,

$$v = 0.0106081x_1 + 0.0659135x_2 + 0.000366491x_3;$$

Social Adjustment,

$$v = 0.00126392x_1 + 0.0470607x_2 + 0.000924504x_3;$$

Family Relations,

$$v = -0.000186386x_1 + 0.0489162x_2 + 0.000912419x_3;$$

Emotionality,

$$v = 0.00464455x_1 + 0.0439445x_2 + 0.00133806x_3;$$

Economic Conservatism,

$$v = 0.00646519x_1 + 0.0822031x_2 + 0.000866572x_3.$$

Table 9 summarizes these results.

Table 9

Discriminant Function: Survival
vs. Attrition-Satisfactory-Achievement

Independent Variable	Multiple Biserial R	Loss F	r-Partial
Morale	0.2019	6.14**	0.1540
Social Adjustment	0.1177	0.41	0.0402
Family Relations	0.0528	0.01	-0.0038
Emotionality	0.1556	3.43	0.1157
Economic Conservatism	0.1209	1.88	0.0860

There was a highly significant loss in the discriminant function when the Morale sub-scale was dropped. This loss was reflected in the direction of logical expectation, i.e., those who survive are higher on the Morale sub-scale score. None of the other losses was significant.

B. Grade-Point Average

Perhaps the most commonly used criterion of academic achievement is the grade-point average. This composite index of a student's collegiate academic success was studied in relation to the Minnesota Personality Scale scores in three ways. They were: the relationship of first-quarter grade-point average and personality scale scores; terminal grade-point average and retest personality scores; and grade-point average difference and personality difference scores.

In each of these three cases coefficients of correlation between personality score and grade-point average were computed. Multiple linear regression predicting grade-point average from high school average, ACE score, and each of the personality scores in turn was used with the first two cases. The linear case of multiple regression was applied because in no case could significant advantage be demonstrated for the use of quadratic equations.

The specific technique employed was the comparison of the multiple regression equations produced by the use of the three variables, i.e., high school average, ACE score, and each personality score in turn, with the multiple regression equations produced by two variables, i.e., high school average and ACE score, in the prediction of grade-point averages involved.

The personality scale scores were demonstrated to be a significant contribution to the prediction of grade-point average when the use of two variables was shown to be a significant loss over the use of three variables.

The deviation form of the general multiple regression equation used in each of the three cases to be discussed may be expressed

$$y = a_1x_1 + a_2x_2 + a_3x_3,$$

where, y = grade-point average;

x_1 = personality scale score;

x_2 = high school average;

x_3 = ACE score;

a_1, a_2, a_3 = constants to be determined.

The usual equations are obtained by differentiating with respect to a_1, a_2 , and a_3 respectively, the expression

$$\Sigma(y - a_1x_1 - a_2x_2 - a_3x_3)^2.$$

The first derivatives are set equal to zero; and after simplification the equations become:

$$\Sigma x_1y = a_1\Sigma x_1^2 + a_2\Sigma x_1x_2 + a_3\Sigma x_1x_3,$$

$$\Sigma x_2y = a_1\Sigma x_1x_2 + a_2\Sigma x_2^2 + a_3\Sigma x_2x_3,$$

$$\Sigma x_3y = a_1\Sigma x_1x_3 + a_2\Sigma x_2x_3 + a_3\Sigma x_3^2.$$

In each case the normal equations were solved simultaneously and the values of a_1, a_2 , and a_3 found.

1. First-quarter grade-point average and personality sub-scale score

The first case investigated was the relation of first-quarter grade-point average and personality sub-scale score. For the total 344 entering freshmen the first-quarter grade-point averages were obtained. Individuals who withdrew before the end of the first quarter were recorded with a grade point of 0.00. The personality sub-scale scores were correlated with the first-quarter grade-point average. These coefficients of correlation are recorded in Table 10. The coefficients are all relatively low.

An analysis of regression was next applied, using as control variables high school average and ACE score. In the prediction of grade-point average from the control variables and the respective sub-scale scores, the regression equations became:

Morale,

$$y = 0.00732630x_1 + 0.564514x_2 + 0.0144682x_3;$$

Social Adjustment,

$$y = 0.00149650x_1 + 0.351094x_2 + 0.0111628x_3;$$

Family Relations,

$$y = -0.000117607x_1 + 0.3537311x_2 + 0.0111863x_3;$$

Emotionality,

$$y = 0.00191657x_1 + 0.346919x_2 + 0.0112315x_3;$$

Table 10

Coefficients of Correlation:
First-Quarter Grade-Point and Personality Test Scores

Sub-scale	Coefficient of Correlation
Morale	0.206
Social Adjustment	0.109
Family Relations	0.034
Emotionality	0.124
Economic Conservatism	-0.124

Economic Conservatism,

$$y = -0.00101268x_1 + 0.349570x_2 + 0.0112046x_3.$$

The summary of the analysis of regression for the five personality sub-scale scores is presented in Table 11. In no case was the loss in prediction significant when the personality sub-scale score was dropped from the regression equation.

Table 11

Analysis of Regression of First-Quarter Grade-Point Average
From Personality Sub-scale Scores

Sub-scale	Sum of Squares		Residuals df = 340	F Loss	r-Partial
	Regression				
	3 Variable df = 3	2 Variable df = 2			
Morale	46.1156	45.0913	118.8572	2.93	0.0924
Social Adjustment	45.5617	45.0913	119.4111	1.34	0.0626
Family Relations	45.0925	45.0913	119.8803	0.01	-0.0032
Emotionality	45.6146	45.0913	119.3582	1.49	0.0661
Economic Conservationism	45.1279	45.0913	119.8450	0.10	-0.0175

2. Terminal grade-point average and retest personality sub-scale score

The second part of the study of grade-point average and personality sub-scale scores was the prediction of the terminal grade-point average

of the retested group using high school average, ACE score, and each of the retest personality sub-scale scores. Terminal grade-point average was the subject's average at graduation or withdrawal. In the case of subjects still enrolled at Iowa State College the average was that computed to the end of Fall Quarter 1951.

The coefficients of correlation are presented in Table 12. The coefficients of correlation were all low.

Table 12

Coefficients of Correlation: Terminal Grade-Point
Average and Retest Personality Scale Scores

Sub-scale	Coefficient of Correlation
Morale	0.1220
Social Adjustment	0.2001
Family Relations	0.1852
Emotionality	0.0853
Economic Conservatism	-0.0014

For the multiple regression the regression equation in each case was found to be as follows:

Morale,

$$y = 0.00536241x_1 + 0.00683156x_2 + 0.244738x_3;$$

Social Adjustment,

$$y = 0.00273541x_1 + 0.00641318x_2 + 0.242966x_3;$$

Table 13

Analysis of Regression of Terminal Grade-Point Average
From Retest Personality Sub-scale Scores

Sub-scale	Sum of Squares		Residuals df = 87	F Loss	r-Partial
	Regression				
	3 Variable df = 3	2 Variable df = 2			
Morale	3.538820	3.266869	8.908080	2.66	0.173
Social Adjustment	3.581540	3.266869	8.865360	3.09	0.185
Family Relations	3.819999	3.266869	8.626901	5.58*	0.245
Emotionality	3.457666	3.266869	8.989231	1.85	0.144
Economic Conservatism	3.314121	3.266869	9.132800	0.45	0.072

Table 14

Coefficients of Correlation: Grade-Point Average
Difference Score and Personality Difference Score

Sub-scale	Coefficient of Correlation
Morale	0.0163
Social Adjustment	-0.0030
Family Relations	0.0230
Emotionality	0.0602
Economic Conservatism	0.0365

Family Relations,

$$y = 0.00503610x_1 + 0.00725741x_2 + 0.223061x_3;$$

Emotionality,

$$y = 0.00267864x_1 + 0.00685634x_2 + 0.245814x_3;$$

Economic Conservatism,

$$y = -0.00338638x_1 + 0.00684046x_2 + 0.245528x_3.$$

Family Relations is the only sub-scale that shows a significant loss. The r-partial, however, is relatively low. Table 13 summarizes the results of the analysis of regression.

3. Personality scale difference and grade-point average difference

The third relationship studied was that of the grade-point average difference and personality difference score. The grade-point average was computed by subtracting the 91 subjects' first-quarter grade-point average from the terminal grade-point average. The personality difference score was obtained by subtracting the freshman personality sub-scale score from the personality retest sub-scale score.

Table 14 summarizes the coefficients of correlation between these two difference scores. Since both variables are difference scores, the analysis was not carried any further than correlation.

VII. MINNESOTA PERSONALITY SCALE AND SOCIAL-EDUCATIONAL INFORMATION

One of the principal purposes of the present investigation was the examination of the relationship between the Minnesota Personality Scale scores, and also of the difference scores, to selected social-educational information. It was desired to ascertain whether the subjects' personality scores or difference scores would differ significantly when grouped according to the various social-educational criteria. In order to investigate this question, the null hypothesis was assumed in each case, i.e., that the scores of the various groups did not differ among themselves significantly. Each hypothesis was then examined by the analysis of variance; where F was sufficiently large, the hypothesis was rejected.

A. Size of Home Community

The home communities of students at the Iowa State College vary in size from open country to the largest metropolitan areas. The childhood and adolescent experiences in such communities are generally recognized to be quite different. The extent to which such differences might be reflected in personality test scores was of interest in the present investigation.

To facilitate the treatment by the analysis of variance of the test scores as they relate to size of home community, the subjects

were grouped into four categories: those from communities of population under 1000; those from communities of population from 1000 to 9999; those from communities of population from 10,000 to 99,999; and those from communities of population over 100,000.

Table 15

Analysis of Variance: Size of Home Community and
Personality Sub-scale Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 3)	Within (df = 87)	Group	Within	
Morale	278.23	10664.81	92.74	122.58	0.76
Social Adjustment	13062.93	44541.51	4354.31	511.97	8.51**
Family Relations	264.08	23094.45	88.03	265.45	0.33
Emotionality	2541.85	37911.91	847.28	435.77	1.94
Economic Conservatism	687.37	8953.378	229.12	102.91	2.23

Each set of sub-scale personality test scores was analyzed to discover any difference which might be present among the four groups of subjects classified by size of home community. The results of these analyses are summarized in Table 15.

It will be noted that there is a highly significant difference among the groups on the Social Adjustment score. The relationship is such that those subjects from the larger home communities are those who score highest on Social Adjustment. The average scores of the four groups were as follows:

100,000 and over	249
10,000 - 99,999	230
1,000 - 9,999	222
Less than 1,000	213

The percentiles for these groups were approximately 80, 55, 40, and 30, respectively. None of the other sub-scale scores showed any significant differences.

The personality difference scores for the five sub-scales were analyzed for the same four groups from different-sized home communities. These results are presented in Table 16.

The groups were found to be significantly different only in Social Adjustment and Emotionality. The groups from the smaller home communities gained more in Social Adjustment and Emotionality than did those from the larger communities. The small-community group's initial scores on both of these personality sub-scales were lower than those of the other groups.

Table 16

Analysis of Variance: Size of Home Community and
Personality Sub-scale Difference Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 3)	Within (df = 87)	Group	Within	
Morale	1026.73	12675.03	342.24	145.69	2.35
Social Adjustment	4478.47	35383.89	1492.82	406.71	3.67*
Family Relations	1683.73	18500.23	561.24	212.65	2.64
Emotionality	3064.17	28299.98	1021.39	325.29	3.14*
Economic Conservation	306.15	7201.45	102.05	82.78	1.23

B. College Housing

During the freshman year at the Iowa State College unmarried women students, with the exception of those who make their home with relatives in Ames, are assigned living quarters in one of the college dormitories. However, by the sophomore year many of the women students have become members of one of a number of nationally-affiliated sororities on the campus.

The personality sub-scale scores of the women who became sorority members as compared to those who did not do so was examined by the analysis of variance. Subjects were classified as sorority or non-sorority members as of Winter Quarter 1951. The students living with relatives may become sorority members and yet not live in sorority houses. Where this was so, the subjects were classified with the sorority group. There were 43 subjects in dormitories and 48 in sororities. A summary of the analysis of each of the sub-scale scores is presented in Table 17.

Highly significant differences were found for the Morale and Social Adjustment scores. Subjects who were members of sororities scored higher on both of these sub-scales than subjects who were non-sorority members. On Morale, the sorority members were at the eighty-fifth percentile, and the dormitory members were at the sixty-fifth

Table 17

Analysis of Variance: Type of College Housing and
Personality Sub-scale Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 2)	Within (df = 88)	Group	Within	
Morale	519.93	10423.11	519.93	117.11	4.44**
Social Adjustment	11534.89	46069.55	11534.89	517.64	22.28**
Family Relations	122.11	23236.42	122.11	261.08	0.47
Emotionality	905.32	39548.44	905.32	444.36	2.04
Economic Conservatism	388.57	9252.178	388.57	103.96	3.74

percentile. On Social Adjustment, the sorority group was at the thirty-fifth percentile, and the dormitory group was at the sixty-fifth percentile.

The personality scale difference scores were analyzed for the sorority and non-sorority groups. There were no significant differences on any of the sub-scales, as indicated by Table 18.

Table 18

Analysis of Variance: Type of College Housing and
Personality Sub-scale Difference Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 1)	Within (df = 89)	Group	Within	
Morale	81.48	13620.28	81.48	153.04	0.53
Social Adjustment	731.94	39130.42	731.94	439.69	1.66
Family Relations	79.70	20104.26	79.70	225.89	0.35
Emotionality	6.43	31357.72	6.43	352.33	0.02
Economic Conservatism	5.77	7501.83	5.77	84.29	0.07

A substantially higher percentage of subjects who were classified as sorority members were also the individuals from the larger home communities. It was, therefore, considered important to attempt to discover whether the significant differences found for the sorority

and dormitory groups were a function of the size of home town rather than the college residence classification.

To accomplish this end the technique of covariance was employed. The subjects were classified according to college residence and then the groups from the varying sized communities were examined to determine whether any significant differences existed among them. The results of these analyses with the personality sub-scales are presented in Table 19.

A highly significant advantage in Social Adjustment score for the subjects from larger home communities was found. The difference is, therefore, a function of the size of the home community rather than of type of college housing.

A similar analysis was made of the personality difference scores and the size of home community of dormitory and sorority members. Table 20 summarizes the results.

The change in Social Adjustment score which had been found with analysis of variance is again highly significant. This indicates that the change in the personality score is more a function of size of home community than of type of college housing.

Table 19

Analysis of Covariance: Personality Sub-scale Scores and
Size of Community of Sorority and Dormitory Members

Sub-scale	<u>Sum of Squares</u>		<u>Mean Square</u>		F
	<u>Within</u> (df = 88)	<u>Difference</u> (df = 1)	<u>Within</u>	<u>Difference</u>	
Morale	10338.97	333.81	117.49	333.81	2.84
Social Adjustment	39659.86	5388.80	450.68	5388.80	11.90**
Family Relations	22983.7660	250.6798	261.1179	250.6798	0.96
Emotionality	38191.3552	243.9747	433.9927	243.9747	0.56
Economic Conservatism	9039.1056	182.8277	102.7171	182.8277	1.78

Table 20

Analysis of Covariance: Personality Sub-scale Difference Scores and
Size of Home Community of Sorority and Dormitory Members

Sub-scale	Sum of Squares		Mean Square		F
	Within (df = 88)	Difference (df = 1)	Within	Difference	
Morale	9763.24	438.56	110.95	438.56	3.95
Social Adjustment	43479.46	10866.10	494.08	10866.10	21.99**
Family Relations	19063.75	378.41	216.63	378.41	1.75
Emotionality	30498.00	58.95	346.57	58.95	0.17
Economic Conservatism	7237.56	61.39	82.245	61.39	0.75

C. Curriculum

In the Division of Home Economics there are ten curricula in which a student may pursue work leading to a major of Home Economics. These curricula are: General Home Economics, Applied Art, Child Development, Foods and Nutrition, Home Economics and Related Sciences, Home Economics Education, Home Management, Household Equipment, Institution Management, and Textiles and Clothing. In order to examine by the analysis of variance the relationship of the personality test scores to the subject's choice of curriculum the data were grouped. Home Economics Education was considered one group; another group was made up of the technical home economics curricula (Foods and Nutrition, Home Economics and Related Sciences, Home Management, Household Equipment, Institution Management, and those individuals who later enrolled in Science); and a third group of the curricula more social and artistic in nature (General Home Economics, Applied Art, Textiles and Clothing, and Child Development).

These three groups of curricula were analyzed to determine whether any significant difference in personality sub-scale scores existed. Table 21 shows all of the sub-scales produced non-significant differences. However, when the difference scores were grouped and analyzed, a significant difference was found in Family Relations. This is shown in Table 22.

Table 21

Analysis of Variance: Curriculum and Personality Sub-scale Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 2)	Within (df = 88)	Group	Within	
Morale	23.73	10919.31	11.865	124.083	0.10
Social Adjustment	533.88	57070.56	266.94	648.53	0.41
Family Relations	747.84	22610.69	373.92	256.94	1.46
Emotionality	778.22	39675.54	389.11	450.86	0.86
Economic Conservatism	272.55	9368.198	136.27	106.46	1.28

Table 22

Analysis of Variance: Curriculum and
Personality Sub-scale Difference Scores

Sub-scale	<u>Sum of Squares</u>		<u>Mean Square</u>		F
	<u>Group</u> (df = 2)	<u>Within</u> (df = 88)	<u>Group</u>	<u>Within</u>	
Morale	529.14	13172.62	264.57	149.69	1.77
Social Adjustment	1544.48	38317.88	772.24	435.43	1.77
Family Relations	2150.08	18033.88	1075.04	204.93	5.25**
Emotionality	1346.22	30017.93	673.11	341.11	1.97
Economic Conservatism	15.20	7492.40	7.60	85.14	0.09

It will be recalled that the Retested Group, as a whole, decreased over the retest period in Family Relations score. The subjects enrolled in the social-artistic curricula, however, did not decrease. The greatest decrease in Family Relations score was found with the group enrolled in Home Economics Education.

D. Marriage Plans

At the time of retesting, the 91 subjects completed a personal information sheet along with the personality scale. Together with other questions the subjects were asked to check one of the following statements about their plans concerning marriage: I plan to marry before graduation; I plan to marry within a year after graduation; and, I have no definite plans. While these statements do not include all possible cases, the 91 subjects were all able to classify themselves in one of the categories.

For the purposes of analysis the subjects checking either of the first two statements were grouped together and compared to those checking the last statement indicating no definite plans. There were 41 subjects in the first group and 50 subjects in the second group. The results of the analysis are shown in Table 23. None of the personality scores showed any significant differences.

Table 23

Analysis of Variance: Marriage Plans and
Personality Sub-scale Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 1)	Within (df = 89)	Group	Within	
Morale	21.75	10921.29	21.75	122.71	0.18
Social Adjustment	160.89	57444.05	160.39	645.44	0.25
Family Relations	790.81	22567.72	790.81	253.57	3.12
Emotionality	452.24	40001.52	452.24	449.46	1.01
Economic Conservatism	354.93	9285.82	354.93	104.34	3.40

Table 24

Analysis of Variance: Marriage Plans and
Personality Sub-scale Difference Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 1)	Within (df = 89)	Group	Within	
Morale	86.80	13614.96	86.80	152.98	0.57
Social Adjustment	986.53	38875.83	986.53	436.81	2.26
Family Relations	635.72	19548.24	635.72	219.64	2.89
Emotionality	233.57	31130.58	233.57	349.79	0.67
Economic Conservatism	359.64	7147.96	359.64	80.31	4.48*

A summary of the analysis of the difference scores, Table 24, shows a significant difference in Economic Conservatism. The group that had no definite plans to marry dropped most in Economic Conservatism.

E. Attitude Toward Experience at Iowa State College

From the personal information sheet completed by the subjects at the time of retesting a scale of attitude toward experience at the Iowa State College was made from the simple check list provided. A copy of these questions may be found in the Appendix. This score was obtained from a simple, unweighted assignment of values to the attitudes. The higher scores were indicative of the better attitudes toward the experiences at the Iowa State College. The data were grouped into three parts and the analyses of variance made with the results shown in Table 25.

Table 25 indicates a highly significant difference in Social Adjustment and a difference significant at the 5% level of confidence between the groups in Family Relations. Individuals with the poorest attitude toward the experience at the Iowa State College were also those with the poorest Social Adjustment and Family Relations scores.

The summary of the analysis of the difference scores is presented in Table 26. A difference significant at the 5% level of confidence

Table 25

Analysis of Variance: Attitude Toward Experience at
Iowa State College and Personality Sub-scale Scores

Sub-scale	<u>Sum of Squares</u>		<u>Mean Square</u>		F
	<u>Group</u> (df = 2)	<u>Within</u> (df = 88)	<u>Group</u>	<u>Within</u>	
Morale	345.02	10598.02	172.51	120.43	1.43
Social Adjustment	8387.91	49216.53	4193.96	559.28	7.50**
Family Relations	1661.96	21696.57	830.98	246.55	3.37*
Emotionality	1001.69	39452.07	500.85	448.32	1.12
Economic Conservatism	398.57	9242.18	199.29	105.02	1.90

Table 26

Analysis of Variance: Attitude Toward Experience at
Iowa State College and Personality Sub-scale Difference Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 2)	Within (df = 88)	Group	Within	
Morale	115.75	13586.01	57.88	154.39	0.37
Social Adjustment	300.70	39561.66	150.35	449.56	0.33
Family Relations	1670.16	18513.80	835.08	210.38	3.97*
Emotionality	1020.38	30343.77	510.19	344.82	1.48
Economic Conservatism	303.56	7204.04	151.88	81.86	1.86

was found on the Family Relations difference scores. Those individuals whose attitude toward the experience at the Iowa State College was poorest showed less change in Family Relations scores.

F. Visits To The College Hospital

From the records of the Iowa State College Hospital a count was made of the number of times each subject went to the hospital for out-patient treatment or advice. These visits included those made by the subjects in connection with the routine medical examination given to entering students. No attempt was made to classify the medical reasons for such visits. The data were grouped into three parts and analyses of variance made for the personality scale score as well as for the difference scores.

Table 27 shows that the only significant difference was in Social Adjustment. The subjects who visited the hospital an unusually great number of times scored lowest on Social Adjustment, and those who visited the hospital the average number of times scored the highest in Social Adjustment. The percentile scores for the three groups were as follows:

Fewer than 9 visits	45th percentile
10 to 24 visits	60th percentile
25 or more visits	35th percentile

Table 27

Analysis of Variance: Visits to College Hospital
and Personality Sub-scale Scores

Sub-scale	<u>Sum of Squares</u>		<u>Mean Square</u>		F
	<u>Group</u> (df = 2)	<u>Within</u> (df = 88)	<u>Group</u>	<u>Within</u>	
Morale	325.68	10617.36	162.84	120.65	1.35
Social Adjustment	4102.50	53501.94	2051.25	607.98	3.37*
Family Relations	226.01	23132.52	113.01	262.87	0.43
Emotionality	800.43	39653.33	400.22	450.61	0.88
Economic Conservatism	322.92	9317.828	161.46	105.88	1.52

Table 28

Analysis of Variance: Visits to College Hospital
and Personality Sub-scale Difference Scores

Sub-scale	<u>Sum of Squares</u>		<u>Mean Square</u>		F
	Group (df = 2)	Within (df = 88)	Group	Within	
Morale	650.85	13050.91	325.43	148.31	2.19
Social Adjustment	3106.80	36755.56	1553.40	417.68	3.72*
Family Relations	71.40	20112.56	36.20	228.55	0.16
Emotionality	1061.74	30302.41	530.87	344.35	1.54
Economic Conservatism	489.79	7077.81	244.90	79.75	3.07

Table 29

Analysis of Variance: State Residence and
Personality Sub-scale Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 1)	Within (df = 89)	Group	Within	
Morale	106.71	10836.33	106.71	121.76	0.88
Social Adjustment	4331.60	53272.84	4331.60	598.57	7.24**
Family Relations	2.52	23356.01	2.52	262.43	0.01
Emotionality	449.45	40004.31	449.45	449.49	1.00
Economic Conservatism	631.36	9009.39	631.36	101.23	6.24*

Table 30

Analysis of Variance: State Residence and
Personality Sub-scale Difference Scores

Sub-scale	Sum of Squares		Mean Square		F
	Group (df = 1)	Within (df = 89)	Group	Within	
Morale	418.89	13282.87	418.89	149.25	2.14
Social Adjustment	1283.14	38579.22	1283.14	433.47	2.96
Family Relations	199.47	19984.49	199.47	224.54	0.89
Emotionality	18.50	31345.65	18.50	352.20	0.05
Economic Conservatism	129.28	7378.32	129.28	82.90	1.56

A summary of analysis of variance difference scores is presented in Table 28. Only Social Adjustment shows a significant relationship. The group who visited the hospital most often was the group which dropped the most in Social Adjustment. On the average the group dropped, according to the freshman norms, to the 10th percentile.

G. State Residence

The Division of Home Economics at the Iowa State College enrolls a good many students from outside of the state of Iowa. In the present investigation it was decided to compare the subjects from out-of-state with those from Iowa. There were 34 subjects from out-of-state and 57 from Iowa.

Table 29 summarizes the analysis of variance. A highly significant difference exists between the subjects in Social Adjustment. The group from out-of-state is at the 60th percentile in Social Adjustment while the Iowa group is at the 40th percentile.

A significant difference in Economic Conservatism was found also. Those subjects from out-of-state were more conservative, 60th percentile; the group from Iowa was somewhat less conservative, 35th percentile.

In Table 30 is shown the summary of the difference scores. None of the analyses of variance showed significance.

VIII. DISCUSSION OF RESULTS

The Minnesota Personality Scale appears to be of no practical value in the prediction of academic achievement. This personality scale was not designed for such a purpose. Also, it may be noted that the results of the present investigation relative to academic achievement only substantiated results which have appeared in educational and psychological literature since the appearance of similar personality tests.

In the study of the relationships of the Minnesota Personality Scale sub-scores to survival-attrition, the findings indicated that the Morale sub-scale discriminates between the group who left college and the group who remained in college. The loss in discrimination when the Morale score was not used with high school average and ACE score was significant at the 5% level in distinguishing the survival and total attrition groups. However, when the discrimination was made between the survival and attrition-satisfactory-achievement groups, the loss by not including the Morale score exceeded the 1% level. It appeared, therefore, that when low grade-point average as a cause of withdrawal from college was minimized by the exclusion of the attrition-unsatisfactory-achievement group, the Morale sub-scale score had better discriminating power. An examination of the items composing the Morale

sub-scale score indicated that over one-fourth of the items relate directly to one's attitude toward education. Perhaps the discrimination obtained was more a matter of attitude toward education than a matter of morale. Those individuals who withdrew from college in spite of satisfactory achievement were significantly lower in their attitude toward education as entering freshmen than the individuals who remained in college.

It is in the area of what have been called in this investigation social-educational factors that the Minnesota Personality Scale shows the most significant and potentially useful relationships. It is apparent that the student from the small Iowa community who does not belong to a sorority is handicapped in social adjustment. It is probably of significance to note that this poor social adjustment is more highly related to the "small Iowa community" than to the college residence status. It is probably true that personality traits which have been formed over a period of years show higher relationships to significant variables. It is interesting to note that persons who select individuals for sororities appear in their evaluation of the prospective sorority member's social abilities to be selecting on some of the same factors measured by the Minnesota Personality Scale Social Adjustment score.

In consideration of size of home community, those individuals from small communities gained more in Social Adjustment and Emotionality

scores than did the groups from larger communities. They were in the beginning the group with the lowest scores in these areas; therefore, this probably indicates that four years of similar experiences has made the total group somewhat more homogeneous.

It is interesting to note that those individuals who were enrolled in the curricula most designed to serve the interests of family relationships became significantly higher on the Family Relations sub-scale score. This should be an encouragement to those individuals responsible for such curricula, and it would appear to demonstrate at least some limited validity for the Family Relations sub-scale score.

In the analysis of the marriage plans of the subjects none of the relations was significant except Economic Conservatism difference scores. This difference was significant at the 5% level of confidence, and indicated that those girls with plans to marry within one year after graduation had increased in Economic Conservatism more than the other group. Such a result may be interpreted perhaps as an indication that the subjects with definite marriage plans were somewhat better adjusted in their attitude toward society's institutions, or it may be that these individuals who would be assuming greater financial and social obligations were more inclined to be conservative. However, a difference found significant at the 5% level must be

interpreted with a great deal of caution. This seems to be especially true when too large a number of analyses have been made.

In the brief scale designed to measure attitudes toward experience at the Iowa State College, the Social Adjustment and Family Relations scores showed significant differences. It is quite possible that such differences might be accounted for by those items in the attitude scale specifically relating to social and family attitudes.

In the analysis of visits to the college hospital, those individuals with the lowest Social Adjustment scores went most often to the hospital, and those individuals with the highest scores visited the hospital the most typical number of times. Whether illness caused the poor social adjustment, or whether the poor social adjustment caused the individuals to seek medical advice and attention more often than usual, is not indicated in the present study. A more careful analysis of the medical records might clarify this relationship. The difference scores on the Social Adjustment sub-scale showed the originally low group to have gained least in Social Adjustment scores.

The state residence classification showed significant relations in two cases. First, the individuals classified in the out-of-state group scored higher than the in-state group in Social Adjustment. Second, individuals from out-of-state were more economically conservative than those in the in-state classification.

It should be noted again that in each case where a difference significant at the 1% level could be demonstrated, the individuals had actually "lived" in such a classification over a period of years. That is, if a person actually lives in a certain sized community or in-state or out-of-state, whatever influence this has upon her personality is more clearly demonstrable than such classifications as the result of simple attitude scales or the mere enumeration of the number of times such a person visits the college hospital or by a rather rough grouping of curricula.

For the convenience of counselors or other persons who may have occasion to use the Minnesota Personality Scale, a scale-by-scale summary of the findings of this investigation is presented.

On the Morale sub-scale subjects who withdrew from the Iowa State College were significantly lower than those individuals who remained in college. When the group who withdrew included only those individuals with satisfactory achievement, the difference in Morale is even more marked. It should be noted that more than one-fourth of the statements in the Morale sub-scale are concerned directly with one's attitude toward society's educational institutions. Therefore, it can be hypothesized that the individuals who left college with satisfactory achievement had, as freshmen, less favorable attitudes toward education than the group that stayed in college. Individuals

from the smaller home communities were found also to be lower on the Morale score.

The Social Adjustment scores of the individuals who as a group may be characterized as from the small Iowa community were significantly lower than those of individuals who came from the larger communities. The subjects who visited the College Hospital most frequently had lower scores on Social Adjustment than the other groups. It was found also that these individuals who visited the Hospital were also the same individuals who gained least in Social Adjustment over the three and one-half years retest period. Also, those individuals with the poorest Social Adjustment scores were found to have the poorest scores on the scale measuring their attitude toward experience at the Iowa State College.

With regard to the Family Relations score, individuals enrolled in the curricula classified as social and artistic gained most over the retest period. Persons whose attitude toward experience at the Iowa State College was highest were also the individuals who scored highest on Family Relations.

In the present investigation the Emotionality score was not very useful for separating the subjects according to the criteria selected for study.

The group of subjects who had plans to marry within a year after graduation gained more in Economic Conservatism than those individuals who had no such plans. Individuals from the small communities were more conservative than those from the larger communities, and individuals from outside the state of Iowa were higher in Economic Conservatism.

IX. SUMMARY

The present investigation was undertaken for the purpose of determining the usefulness of the Minnesota Personality Scale for the counseling of Home Economics students at the Iowa State College.

The criteria of the usefulness of the Personality Scale were in two principal areas. The first was that of academic achievement, and the second was a group of social-educational factors. The relationships of the Personality Scale to academic achievement were studied from the standpoint of survival-attrition and achievement as shown by grade-point average. The social-educational factors considered in the investigation were as follows: size of home community, type of college housing, selection of curriculum, visits to the college hospital, marriage plans, attitude toward experience at the Iowa State College, and state residence.

The subjects were 344 freshman women enrolled in the Division of Home Economics during the fall quarter of 1947. The study of survival-attrition and of first-quarter grade-point average was made with these subjects. Ninety-one of this original group were retested and studied after an interval of three and one-half years. The analysis of terminal grade-point average and of the social-educational factors was made with this group of 91 subjects.

The Minnesota Personality Scale has five sub-scales: Morale, Social Adjustment, Family Relations, Emotionality, and Economic Conservatism. The scores of the Iowa State College subjects on the five sub-scales were found to be comparable to the scores of the norm group of the scale. The reliability coefficients were substantially the same as those reported by the authors. During the interval of three and one-half years the retested group were found to increase significantly in the direction of better adjustment on the Personality Scale.

The survival-attrition problem was treated statistically by the use of the discriminant function. There were four different groupings of subjects for whom discrimination on the basis of Personality Scale scores were attempted. They were the following: survival vs. total attrition; attrition-satisfactory-achievement vs. attrition-unsatisfactory-achievement; survival vs. attrition-satisfactory-achievement; and attrition-satisfactory-achievement plus survival vs. attrition-unsatisfactory achievement. The study of grade-point average and the sub-scales of the Personality Scale employed correlation and linear regression. The results indicated no important relationships between any of the sub-scales of the Minnesota Personality Scale and academic achievement. However, the group which withdrew from college with satisfactory achievement were found to be lower on the Morale sub-scale.

The sub-scales scores of the 91 retested subjects were studied in relation to the social-educational factors by the technique of the analysis of variance. When the subjects were stratified according to one of the factors, the technique of covariance was employed. A number of significant relationships of the sub-scale scores to the classifications according to the social-educational factors were found. Sorority women, individuals from the larger home communities, and individuals from outside of the state of Iowa were found to have higher Social Adjustment scores. Poorer Social Adjustment scores were found for the group of subjects who visited the college hospital more often than average. A significantly greater increase in Family Relations score was found for the group of subjects enrolled in social-artistic Home Economics curricula. Higher Social Adjustment and Family Relations scores were found for those subjects who showed a generally better attitude toward their experience at the Iowa State College. Those subjects who planned to be married within a year of graduation had higher Economic Conservatism scores. It was also noted that the Morale scores of individuals from small home communities were lower than the scores of those subjects from the larger communities.

In general the changes in sub-scale scores over the interval of three and one-half years were in the direction of greater homogeneity. Those subjects with initially high scores remained high while those

with initially low scores increased in the direction of better adjustment.

The Social Adjustment sub-scale appeared to be most highly related to the variables studied. The Emotionality sub-scale showed no relationship to the variables studied.

The general results of the investigation appear to indicate no useful relations between the scores on the Minnesota Personality Scale and academic achievement, but significant relationships between the Personality Scale on the social-educational factors studied were found.

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XI. APPENDIX

C O P Y

February 20, 1951

Dear Student:

You have been selected to take part in a research study of some of the important areas of student adjustment to college life. This study is being sponsored by the Iowa State College Educational Research Laboratory with the cooperation of the Psychology Department and the Testing Bureau. We would be most grateful for your cooperation in this project.

During those early busy days of the fall of 1947, when you entered Iowa State College, you took a short personality test along with the battery of Freshman Entrance Examinations. Now that three and a half years have gone by, we would like to have you take that test again. Also, we want your reactions to some simple questions about life here at Iowa State. Our hope is that your answers, along with the reactions of the other students who have been selected, will help us to do a better job of orienting and guiding future entering classes at Iowa State. Can we count on your assistance?

I shall have the test in the Testing Bureau, Building H (the temporary building just in back of Beardshear Hall) on Thursday afternoon, February 22, from 1:00 p.m. to 6:00 p.m., and Friday, February 23, from 9:00 a.m. to 11:50 a.m. and from 1:00 p.m. to 6:00 p.m. Can you spare about one hour sometime Thursday afternoon, or Friday during the morning or afternoon? It is very important that we have your individual cooperation in order to make this study a success.

I am looking forward to meeting you in the Testing Bureau on either Thursday afternoon or sometime Friday.

Sincerely yours,

/S/ Alice L. Palubinskas

Alice L. Palubinskas
Instructor of Psychology

ALP:jlc

PERSONAL INFORMATION SHEET

I am most grateful for your cooperation in this research study. You may be certain that, although the information we require cannot be anonymous, it will be kept **STRICTLY CONFIDENTIAL**.

Name

If you are married, please give your maiden name also:

Do you have any children? () yes, () no.

Division: Home Economics () Science (), Other ()

Address:

Probable time of graduation from Iowa State:

- () Winter, '51
- () Spring, '51
- () Summer, '51
- () Fall, '51
- () 1952 or later
- () Do not plan to graduate

Would you rate your general health as:

- () Excellent
- () Good
- () Fair
- () Poor

Comparing today with the time you entered Iowa State College in 1947, would you rate your:

	Better	About same	Worse
Health	()	()	()
Outlook on life in general	()	()	()
Attitude toward your parents	()	()	()
Social ability	()	()	()
Personal appearance	()	()	()
Attitude toward Iowa State	()	()	()

In preparing me generally for college life at Iowa State my pre-college was:

- () very adequate
- () about average
- () somewhat inadequate
- () very poor

1. How well is preparing for college work in Iowa State, for high school?

- () very adequate
- () about average
- () somewhat inadequate
- () very poor

2. How well is preparing academically for Iowa State, my high school work?

- () very adequate
- () about average
- () somewhat inadequate
- () very poor

As I look back now on my stay here at Iowa State I would say the things I have been:

Satisfied

- ()
- ()
- ()
- ()
- ()
- ()
- ()
- ()

Dissatisfied

- () method of teaching
- () grade-point
- () work schedule
- () first instruction
- () number of classes
- () living conditions
- () social life
- () progress toward learning
- () style of teaching

After college I plan to:

Teach:

Yes () No () Uncertain ()

If I do teach it will be in:

() high school () college () extension service
() nursery school () junior high () elementary school

Do professional work for which my college education has prepared me

() yes () no () uncertain

Do work other than that for which college prepared me

() yes () no () uncertain

Do graduate work:

() yes () no () uncertain

Go into some branch of military service:

() yes () no () uncertain

At present my plan are to marry: Before graduation () Within a
year after graduation () No definite plans ()

DO NOT WRITE IN THIS BOOKLET
(Use special answer sheet for marking your answers)

MINNESOTA PERSONALITY SCALE
(For Women)

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Explanation: The following pages contain a number of statements about which there is no general agreement. People differ in the way they feel about the statements, and there are no right or wrong answers. We are trying to study certain aspects of personality that are important in your adjustment to school and to life. You can help us by answering each question honestly and thoughtfully. Happiness and satisfying achievement are definitely related to your personal adjustments; therefore, any effort to study this aspect of your life is worth your cooperation.

Directions: Read each statement carefully and on the Special Answer Sheet mark the one alternative which best expresses your feeling about the statement. Whenever possible, let your own personal experience determine your answer. Do not spend too much time on any item. If in doubt, select the one phrase which seems most nearly to express your present feeling about the statement. Put your answers on the answer sheet by blackening the space between the pair of dotted lines under the letter which represents your answer. Try the samples below and put your answers on the answer sheet in the box marked SAMPLES.

Samples: Some statements are like the following:

- (a) City streets should permit one way traffic only.

You are to choose one of the following alternatives to indicate your answer:

(SA) Strongly Agree (A) Agree (U) Undecided (D) Disagree (SD) Strongly Disagree

Above the pairs of dotted lines on the answer sheet are the initial letters of the above alternates to help you mark your answer in the correct space. Now try sample (b) and mark your answer in the same way.

- (b) Local and national elections should not be held at the same time.

Some statements are like the following:

- (c) Do you study for examinations with a group of fellow students?

Your answer to these questions is to be chosen from one of these alternatives.

(AA) Almost Always (F) Frequently (O) Occasionally (R) Rarely (AN) Almost Never

- (d) Do you go to the school's important football games?

On the answer sheet, each Part of the Scale will have the alternative answers printed in full at the top of the columns. The initial letters of the alternatives will appear above the pairs of dotted lines to help you locate the pair of dotted lines in which to mark your answer for each item.

Be sure the Item Number on the Answer Sheet Corresponds with the Item Number in the Booklet.

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PART I

Work rapidly. Be sure to answer **every** item by choosing **one** of the following alternatives.

- (SA) Strongly Agree
- (A) Agree
- (U) Undecided
- (D) Disagree
- (SD) Strongly Disagree

1. Almost anything can be fixed up in the courts if you have enough money.
2. The joys of family life are much overrated.
3. Life is just a series of disappointments.
4. No one cares much what happens to you.
5. On the whole, policemen are honest.
6. Education helps a person to use his leisure time to better advantage.
7. The young man of today can expect much of the future.
8. There is little chance for advancement in industry and business unless a man has an unfair pull.
9. A high school education is worth all the time and effort it requires.
10. The day is not long enough to do one's work well and have any time for fun.
11. It does not take long to get over feeling gloomy.
12. Education is of no help in getting a job today.
13. Laws are so often made for the benefit of small selfish groups that a man cannot respect the law.
14. Public money spent on education during the past few years could have been used more wisely for other purposes.
15. School training is of little help in meeting the problems of real life.
16. Most people can be trusted.
17. The future looks very black.
18. Life is just one worry after another.
19. A man can learn more by working four years than by going to high school.
20. On the whole, lawyers are honest.
21. One's parents usually treat him fairly and sensibly.
22. Court decisions are almost always just.
23. It is difficult to think clearly these days.
24. On the whole, judges are honest.
25. The law protects property rights at the expense of human rights.
26. The sentences of judges in courts are determined by their prejudices.
27. Education only makes a person discontented.
28. These days one is inclined to give up hope of amounting to something.
29. There is really no point in living.
30. Education is more valuable than most people think.

Do not stop. Go on to the next page.

31. It is all right for a person to break the law if he doesn't get caught.
32. A man should tell the truth in court, regardless of the consequences.
33. A hungry man has a right to steal.
34. Most young people are getting too much education.
35. Only subjects like reading, writing and arithmetic should be taught at public expense.
36. A person is justified in giving false testimony to protect a friend on trial.
37. Success is more dependent on luck than on real ability.
38. It is great to be living in these exciting times.
39. Personal circumstances should never be considered an excuse for breaking the law.
40. Savings spent on education are wisely invested.
41. An educated man can advance more rapidly in business and industry.
42. High school courses are too impractical.
43. Real friends are as easy to find as ever.
44. Our schools encourage an individual to think for himself.

PART II

Work rapidly. Be sure to answer **every** item by choosing **one** of the following alternatives.

- (AA) Almost Always
- (F) Frequently
- (O) Occasionally
- (R) Rarely
- (AN) Almost Never

Begin with No. 45 on the answer sheet.

45. Are you eager to make new friends?
46. Do you enjoy entertaining people?
47. Do you find it easy to keep up your courage?
48. Do you have a fairly good time at parties?
49. Do you dislike social affairs?
50. Do you feel self-conscious with strangers?
51. Do you find it easy to make friendly contacts with members of the opposite sex?
52. Do you stay in the background at parties or social gatherings?
53. Are you able to recover quickly from social blunders?
54. Do you like to mix with people socially?
55. Do you like to meet new people?

Do not stop. Go on to the next page.

56. Do you participate easily in ordinary conversation?
57. Do you enjoy speaking before groups of people?
58. Do you feel self-conscious when volunteering to take part in games or other organized activities?
59. Do you take an active part in the entertainment at parties?
60. At an important dinner, would you do without something rather than ask to have it passed?
61. Do you cross the street to avoid meeting people you know?
62. Do you feel self-conscious when reciting in class?
63. Do you feel at ease with people?
64. Do you meet strangers easily?
65. Do you avoid people when it is possible?
66. Do you lose self-confidence easily?
67. Do you seek to meet the important person present at a reception or tea?
68. Are you embarrassed because of lack of experience in social situations?
69. Do you hesitate to enter a room by yourself when a group of people are sitting around the room talking together?
70. Do you have difficulty in talking to most people?
71. Do you have the time of your life at social affairs?
72. Do you get along as well as the average person in social activities?
73. Are you well poised in social contacts?
74. If a party is dull, do you take the lead in enlivening it?
75. Do you find it easy to express your ideas?
76. Do you have difficulty saying the right thing at the right time?
77. Are you rather shy in contacts with people?
78. Do you become self-conscious readily?
79. Do you find it easy to act naturally at a party?
80. Are you indifferent to ordinary social contacts?
81. Do you have difficulty in starting a conversation with a person who has just been introduced?
82. Do you have much difficulty in thinking of an appropriate remark to make in group conversation?
83. Are you indifferent to people?
84. Do you find it easy to get along with people?
85. Are you embarrassed when meeting new people?
86. Do you feel that social affairs are not serious enough for you to enjoy?
87. After being caught in a mistake, do you find it hard to do good work for a while?
88. Can you keep people from taking advantage of you?
89. Are you the center of favorable attention at a party?
90. Are you nervous and ill at ease with most people?

Do not stop. Go on to the next page.

91. Do you prefer to limit your social contacts to a few friends?
92. Do you find it easy to get your own way in most situations?
93. Do you prefer to limit your social life to members of your own family?
94. Do you find it easy to have a good time at a party?
95. Are you annoyed by social activities?
96. Do you find that it is easy to be "the life of a party"?
97. Can you keep cool in important situations?

(Skip numbers 98 to 105 on the answer sheet)

PART III

Work rapidly. Be sure to answer **every** item by choosing **one** of the following alternatives.

- (AA) Almost Always
- (F) Frequently
- (O) Occasionally
- (R) Rarely
- (AN) Almost Never

Begin with No. 106 on the answer sheet.

106. Are the members of your family too curious about your personal affairs?
107. Is it hard for you to keep a pleasant disposition at home?
108. Do you become nervous at home?
109. Can you trust the people in your family?
110. Is your home a very pleasant place?
111. Do you and your parents live in different worlds, so far as ideas are concerned?
112. Do you feel most contented at home?
113. Do your parents too often expect you to obey them, now that you are grown up?
114. Would your parents keep faith in you even though you could not find work?
115. Does either of your parents criticize you unjustly?
116. Was your father your ideal of manhood?
117. Have you felt that either of your parents did not understand you?
118. Does either of your parents find fault with your conduct?
119. Is either of your parents easily irritated?
120. Have you had to keep quiet or leave the house to have peace at home?
121. Has either of your parents certain personal habits which irritate you?
122. Have you felt that your friends have had happier home lives than you?
123. Have the actions of either parent aroused great fear in you?
124. Have there been family quarrels among your near relatives?
125. Have you disagreed with your parents about your choice of a life work?

Do not stop. Go on to the next page.

126. Do your parents seem too old-fashioned in their ideas?
127. Do your parents expect too much from you?
128. Would you sacrifice everything for your family?
129. Do you discuss important plans with members of your family?
130. Do you feel you owe your greatest obligation to your family?
131. Do you find less understanding at home than elsewhere?
132. Have you disagreed with your parents about the way in which work around the home should be done?
133. Has lack of money tended to make home unhappy for you?
134. Does either of your parents get angry easily?
135. Do your parents fail to recognize that you are a mature person and treat you as if you were still a child?
136. Has there been a lack of real affection and love in your home?
137. Has either of your parents insisted on obedience regardless of whether or not the request was reasonable?
138. Do you love your mother more than your father?
139. Have you had a strong desire to run away from home?
140. Have your parents objected to the kind of companions you go around with?
141. Is either of your parents very nervous?

PART IV

Work rapidly. Be sure to answer **every** item by choosing **one** of the following alternatives.

- (AA) Almost Always
- (F) Frequently
- (O) Occasionally
- (R) Rarely
- (AN) Almost Never

Begin with No. 142 on the answer sheet.

142. Does criticism disturb you greatly?
143. Are your feelings easily hurt?
144. Do you get angry easily?
145. Were you ill much of the time during childhood?
146. Do things go wrong for you from no fault of your own?
147. Are you sorry for the things you do?
148. Do you feel just miserable?
149. Do ideas run through your head so that you can not sleep?
150. Do you feel self-conscious because of your personal appearance?

Do not stop. Go on to the next page.

151. Are your eyes very sensitive to light?
152. Do you have ups and downs in mood without apparent cause?
153. Do you get discouraged easily?
154. Are you bothered by the feeling that things are not real?
155. Do you consider yourself a rather nervous person?
156. Do you worry too long over humiliating experiences?
157. Do you feel fatigued when you get up in the morning?
158. Do you have spells of the "blues"?
159. Have you been depressed because of low marks in school?
160. Do you worry over possible misfortunes?
161. Do you daydream?
162. Do you feel very tired towards the end of the day?
163. Do you envy the happiness that others seem to enjoy?
164. Does it frighten you when you have to see a doctor about some illness?
165. Do you have conflicting moods of love and hate for members of your family?
166. Do you get upset easily?
167. Do you feel lonesome, even when you are with people?
168. Do you get excited easily?
169. Do you have difficulty getting to sleep even when there are no noises to disturb you?
170. Do you feel that your parents are disappointed in you?
171. Are you frightened by lightning?
172. Do you have difficulty in breathing through your nose?
173. Do you take cold rather easily from other people?
174. Do you have headaches?
175. Has it been necessary for you to have medical attention?
176. Do you find it necessary to watch your health carefully?
177. Do you feel tired most of the time?
178. Have you been ill during the last ten years?
179. Do you have difficulty in getting rid of a cold?
180. Do you suffer discomfort from gas in the stomach or intestines?
181. Do you have colds?
182. Are you subject to eye strain?
183. Have you been absent from school because of illness?
184. Does some particular useless thought keep coming into your mind to bother you?
185. Do you have shooting pains in the head?

Do not stop. Go on to the next page.

PART V

Work rapidly. Be sure to answer **every** item by choosing **one** of the following alternatives.

- (SA) Strongly Agree
- (A) Agree
- (U) Undecided
- (D) Disagree
- (SD) Strongly Disagree

Begin with No. 186 on the answer sheet.

- 186. If our economic system were just, there would be much less crime.
- 187. It is better to buy milk from private companies than from cooperatives.
- 188. Laborers in mass production industries should stay out of the C. I. O.
- 189. On the whole our economic system is just and wise.
- 190. Municipal power plants should be built to compete with private utilities.
- 191. The amount of profit which a business can make should be regulated by the government.
- 192. A man should be allowed to keep as large an income as he can get.
- 193. A man should strike in order to secure greater returns to labor.
- 194. Poverty is chiefly a result of injustice in the distribution of wealth.
- 195. Private ownership of property is necessary for economic progress.
- 196. Pickets arrested for blocking the entrance to a factory should be fined heavily.
- 197. School teachers who openly approve of labor unions and socialistic ideas should be dismissed.
- 198. It is more economical to buy gasoline from cooperatives than from the regular filling stations.
- 199. Large incomes should be taxed much more than they are now.
- 200. The philanthropy of rich men more than compensates for the irregular practices they may have used to acquire their wealth.
- 201. Private doctors should encourage trends towards socialized medicine.
- 202. Money should be taken from the rich and given to the poor during hard times.
- 203. Cooperative housing plans should be encouraged.
- 204. "Consumer's Union" and "Consumer's Research" are fair and reliable buying guides.
- 205. Big industries should be taxed more heavily.
- 206. Labor should have much more voice in deciding government policies.
- 207. The government ought to guarantee a living to those who can't find work.
- 208. The incomes of most people are a fair measure of their contribution to human welfare.
- 209. Sit-down strikes should not be tolerated.
- 210. Labor does not get its fair share of what it produces.
- 211. When a rich man dies, most of his property should go to the state.
- 212. The government should take over all large industries.
- 213. The government should not attempt to limit profits.
- 214. The growth of consumer cooperatives should be stopped.
- 215. Our economic system is criticized too much.
- 216. Income taxes in the higher income brackets should be raised.
- 217. Most great fortunes are made honestly.

(Omit number 218 on the answer sheet)